state and local agencies as well as private organizations and form the basis of a Bay-Delta GIS for NIS.

An integral component of the goals to prevent and limit spread of NIS is early detection monitoring and rapid response. It is important to identify and monitor susceptible areas on a regular basis in an effort to detect invasions early and allow the best possible chance of successful management for the least cost and disruption. Examples of areas more susceptible to invasions include those in close proximity to ports with ballast water discharges and areas of physical ecosystem disturbance such as newly restored areas.

RESEARCH AND TECHNOLOGY TRANSFER

A strong commitment to research and information/technology transfer is critical towards achieving the goals presented in this management plan. The CALFED NIS Program will communicate and coordinate with CMARP, the coordinating entity for the common programs of monitoring, research and assessment, in their efforts to identify research needs. A subcommittee within NISAC will meet annually to review and prioritize research needs already identified by various entities, as well as newly identified research gaps relative to the goals and objectives of the plan. A report and recommendations, including suggested opportunities for funding critical research should be submitted to the NISAC and other interested groups following the annual review. This commitment also extends to the transfer of information to a wide audience through many venues to assure coordination and cooperation with others involved in the same type of endeavors.

ENFORCEMENT AND COMPLIANCE

In those areas where enforcement and compliance are identified as an issue, this program will develop the information base to illustrate and define the issue, describe possible approaches, and make recommendations to appropriate agencies to enhance the adherence to regulations. As programs to prevent, control, and manage NIS are cooperatively developed, certain practices or prohibitions may emerge as mandatory requirements for specific entities in order for the three management goals to be accomplished. It will be necessary for responsible agencies to monitor the compliance with such requirements. In these cases, enforcement mechanisms will be essential to encourage compliance with recognized standard practices.

PROGRAM EVALUATION

To be effective and responsive this management program and associated implementation plans must include an evaluation component to identify progress, evaluate implementation problems and needs, and make necessary corrections at any time. The adaptive management strategy will be highlighted. The evaluation process will include:

1. Develop a peer review process for program evaluation using the technical expertise and experience of the national, regional, and local groups identified in this report as entities familiar with the issues of NIS.

2. Coordinate and communicate with CMARP for the CALFED program evaluation process.

3. Establishment of an evaluation subcommittee within NISAC responsible for reviewing performance measures, conducting the evaluation efforts, reporting the results to NISAC and others if required, and identifying program or plan adjustments that address projected outcomes.

4. The three program goals, as previously presented, provide the focal point for evaluation. Quantifiable milestones for each goal and objective will be developed and have realistic, feasible time frames.

5. The evaluation process will involve those with implementation responsibility, resource user groups, and others affected by the program implementation.
6. An annual report highlighting progress and achievements will be prepared and distributed. The annual report will include evaluation of the efficacy of the program strategies and tasks and identify revisions as needed. The annual report will be readily available on the Internet and distributed to local and federal agencies and

legislative decision-makers and CALFED program managers.

POLICY BACKGROUND

The complex environmental and economic impacts posed by the intrusion of NIS require policies and programs to address prevention and control at various levels of government. In addition, improved coordination of new and existing policies could more effectively focus attention on the problems and achieve more positive results. The following overview describes the basic role of the federal, regional and state governments in implementation of efforts to address NIS. The contents of this section includes:

- The CALFED role in implementing restoration of the San Francisco Bay-Delta estuary and Sacramento-San Joaquin Rivers and their watersheds and the objectives of that program with regard to nonnative invasive species.
- The federal Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA, Public Law 101-646) and the reauthorization of The National Invasive Species Act of 1996 (NISA).
- Executive Order on Invasive Species issued by President Clinton in February of 1999 which was intended to coordinate a federal strategy to address the growing environmental and economic threat of NIS.
- An assessment of California's existing laws and programs that address prevention and control of NIS.

Immediate and strategic coordinated federal and state action is critical for effective NIS prevention and control in North American waters. For example, over 212 aquatic nuisance species have already become established in the San Francisco Bay-Delta estuary watershed alone. The rate of invasion appears to be increasing due in part to expanded national trade and travel. Reducing the acceleration of invasions will require managing transport mechanisms including the discharge of ship ballast water, aquaculture activities, global trade in aquarium organisms, live seafood and live bait. Prevention of new NIS introductions coupled with long-term research on control strategies are priorities.

CALFED ROLE

The CALFED Bay-Delta Program was established to develop a long-term solution to the problems affecting the Bay-Delta system. Building on the spirit of cooperation reflected in the December 1994 Bay-Delta Accord, a group of state and federal agencies have come together to work cooperatively at developing and implementing a long-term comprehensive plan that will restore the ecological health and improve water management for beneficial uses of the Bay-Delta system.

The Ecosystem Restoration Program (ERP) is the principal Program component designed to restore the ecological health of the Bay-Delta ecosystem. The ERP represents one of the most ambitious and comprehensive ecosystem restoration projects ever undertaken in the United States. The goal of the ERP is to restore or mimic ecological processes and to increase and improve aquatic and terrestrial habitats to support stable, self-sustaining populations of diverse and valuable species.

As part of the ERP, the U.S. Fish and Wildlife Service has accepted the responsibility of developing, implementing, managing, and coordinating a non-native invasive species program in the San Francisco Bay-Delta estuary which will include terrestrial as well as aquatic species. This program, with the contributions of CALFED staff, agencies, academia, non-profits and interested stakeholders, will focus on the San Francisco Bay-Delta, the Sacramento and San Joaquin Rivers and their watersheds.

CALFED MEMBER AGENCIES:

STATE:

The Resources Agency
- Department of Fish and Game
- Department of Water Resources

California Environmental Protection Agency
- State Water Resources Control Board

Department of Food and Agriculture

FEDERAL:

Environmental Protection Agency

Department of the Interior
- Fish and Wildlife Service
- Bureau of Reclamation
- U.S. Geological Survey
- Bureau of Land Management

U.S. Army Corp of Engineers
Department of Agriculture
Natural Resources Conservation Service
Department of Commerce
National Marine Fisheries Service
Western Area Power Administration

FEDERAL ROLE

INVASIVE SPECIES COUNCIL

The expanded federal effort to address NIS includes the Executive Order on Invasive Species signed by President Bill Clinton on February 3, 1999. This action is intended to build upon existing laws such as the National Environmental Policy Act, NANPCA, The Lacy Act, Federal Plant Pest Act, Federal Noxious Weed Act, and the Endangered Species Act. The order creates an Invasive Species Council which has eighteen months to develop a comprehensive plan to minimize the economic, ecological, and human health impacts of invasive species and determine the steps necessary to prevent the introduction and spread additional invasive species. This council will be co-chaired by Secretary of the Interior, Secretary of Agriculture, and Secretary of Commerce and will work in cooperation with the Secretary of State, Department of Defense, Secretary of Transportation, the Administrator of the Environmental Protection Agency, states, tribes, scientists, universities, shipping interests, environmental groups and farm organizations to combat invasive plants and animals. In addition, the President's fiscal year 2000 budget proposes an additional $29 million to support these efforts.

NONINDIGENOUS AQUATIC NUISANCE PREVENTION AND CONTROL ACT

NANPCA was primarily a federal response to the Great Lakes invasion of the zebra mussel which has caused extensive ecological and socioeconomic impacts. Although the zebra mussel issue played a key role in prompting passage of the legislation, NANPCA clearly was established to prevent the occurrence of new unintentional introductions of aquatic nuisance species (ANS) and to limit the dispersal and adverse impacts of invasive species currently in United States waters.

The actions identified in NANPCA are a first line of defense against aquatic nuisance invasions. The Act provides an institutional framework that promotes and coordinates research, develops and applies prevention and control strategies, establishes national priorities, educates and informs citizens, and coordinates public programs. The Act calls upon states to develop and implement comprehensive state management plans to prevent introduction and control the spread of aquatic nuisance species (ANS). Section 1002 of NANPCA outlines five objectives of the law, as follows:

- To prevent further unintentional introductions of nonindigenous aquatic species;
- To coordinate federally funded research, control efforts and information dissemination;
- To develop and carry out environmentally sound control methods to prevent, monitor, and control unintentional introductions;
- To understand and minimize economic and ecological damage; and
- To establish a program of research and technology development to assist state governments.

Section 1201 of the Act established the national Aquatic Nuisance Species Task Force (ANSTF), co-chaired by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA). The Task Force is charged with coordinating governmental efforts related to prevention and control of ANS. The ANSTF (consisting of seven federal agency representatives and eight ex-officio members representing nonfederal governmental agencies) has adopted the ANS program under Section 1202 of NANPCA. This program recommends the following elements:

- Prevention: Establish a systematic risk identification, assessment and management process to identify and modify pathways by which ANS spread.
- Detection and Monitoring: Create a national ANS information center to coordinate efforts to detect the presence and monitor the distributional changes of all nonindigenous ANS,

identify and monitor the impacts to native species and other effects, and serve as a repository for that information.

- Control: The Task Force or any other potentially affected entity may recommend initiation of a nonindigenous ANS control program. If the Task Force determines that the species is a nuisance and control is feasible, cost effective and environmentally sound, a control program may be approved.

The ANSTF recommends research, education and technical assistance as strategies to support the elements listed above. The Task Force also provides national policy direction as a result of protocols and guidance that have been developed through the efforts of working committees. The ANSTF currently has two regional panels, the Great Lakes Panel and the Western Regional Panel. The latter was added as part of a 1996 amendment to NANPCA. The new law of 1996 (NISA) expanded the focus of the original legislation from zebra mussels to all potential ANS and enlarged the area of concern from the Great Lakes/Hudson River to all of the U.S. In addition, NISA requires that the Coast Guard (USCG) draft regulations to implement a ballast water management program nation-wide. This new program was to be patterned after the program established under NANPCA for the Great Lakes/Hudson River.

The USCG regulations will apply to all vessels with ballast on board that enter U.S. waters from outside the Exclusive Economic Zone (EEZ). These vessels will be encouraged to *voluntarily* comply with the International Maritime Organization=s (IMO) guidelines for ballast exchange at sea, and will be *required* to submit a report form to the USCG documenting where, when and how they dealt with their ballast.
Ballast procedures allowed under the proposed regulations:

1. open ocean exchange in at least 500 meters of water, or
2. retain ballast on board, or
3. obtain approval for using an alternate method in a given situation, or
4. discharge ballast in an approved Aalternate exchange zone.

Reporting requirements under the new regulations:

1. record ballast procedures on the IMO form;
2. fax the information to the USCG upon arrival in port;
3. retain records on board for at least 2 years.

The USCG regulations have been circulated for public review and comment. It is anticipated that the rule will become final in April 1999. The voluntary guidelines will become mandatory if vessels fail to comply with ballast exchange procedures or fail to submit the report forms to the USCG. The statute requires the USCG to report to Congress within 18 months of the effective date of the regulations, providing information on the level of voluntary compliance. It is anticipated that a mandatory program, if needed, would be implemented in 2000 or 2001.
The USCG will establish a Clearinghouse to retain the report forms and to be a central repository for ballast management-related information/studies. Such information will include; patterns of invasion, measures of compliance and effectiveness of IMO procedures, a national database of exotic species, the economic and environmental impacts of the invaders, and the economic impacts of control measures. The Smithsonian Environmental Research Center (SERC) will maintain the Clearinghouse.

Locally, the proposed federal project to deepen the Oakland Harbor Channel to allow larger ships into the Port of Oakland has raised concerns about increases in ballast water releases. San Francisco Baykeeper and the Center for Marine Conservation have been actively encouraging the Port of Oakland, the Army Corp. of Engineers and the consulting agencies, (U.S. Fish and Wildlife Service and the National Marine Fisheries Service) to fully evaluate the potential impacts of non-native species introduction into the San Francisco Bay. The Port of Oakland has agreed to require that all ships calling at the Port exchange their ballast water at sea, except in emergencies. While applauding this step as a positive effort to reduce introductions, a full consultation under the Endangered Species Act is desired by these groups, as they feel that it may result in more information and more effective and stable control measures.

CLEAN WATER ACT

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters, and where attainable, to achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water.

Discharges of pollutants and fill material to waters of the United States are regulated under various sections of the CWA. In California, the U.S. Environmental Protection Agency (EPA) has delegated the authority to implement the CWA to the State Water Resources Control Board (SWRCB), which in turn has designated the nine Regional Water Quality Control Boards (RWQCBs), established under the State's Porter-Cologne Water Quality Control Act, as the implementing agencies.
The mission of RWQCBs, under the State's Porter-Cologne Act, is consistent with the objective of the CWA, namely, to protect beneficial uses of waters of the state. To accomplish this objective, RWQCBs use various planning and permitting programs authorized under the CWA. Section 402 authorizes the National Pollutant Discharge Elimination System (NPDES), which is a permit program intended to reduce and eliminate the discharge of pollutants from point sources that threaten to impair beneficial uses of water bodies. The State's Waste Discharge Requirements, discussed below, incorporate the authority of the federal NPDES permitting program for discharges of wastes to surface waters.

The CWA defines point sources to include vessels (Section 502(14)); and prohibits all point source discharges of pollutants into U.S. waters unless a permit has been issued either under Section 402 (NPDES) or Section 404 (dredge and fill activities). The CWA provides a narrow exemption from the usual CWA regulations for certain discharges (including ballast water) only for Armed Forces vessels (Section 502(6)(A)). However, these discharges are to be regulated by an EPA- and DOD-sponsored proposed rule under Section 312(n) of the CWA, Uniform Discharge Standards for Vessels of the Armed Forces.

Under Section 305(b) of the CWA, RWQCBs are required to assess water bodies for attainment of beneficial uses every two years, and report to the EPA. In cases where beneficial uses of water bodies are shown to be impaired, Section 303(d) requires the RWQCBs to list the impaired water bodies and "establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters." Section 502(6) defines "pollutant" as dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

Ballast water is considered to be a "waste" by the RWQCBs, based on the above definition and definitions in the State Water Code, described below. Based on these federal and state definitions and scientific evidence, the San Francisco Bay RWQCB has made a finding that ballast water has created "pollution" in the estuary. In February 1998, the San Francisco Bay RWQCB listed the waters of the San Francisco Bay-Delta Estuary as impaired under Section 303(d) because of introductions of NIS.

Section 303(d) of the CWA requires implementing agencies to establish and allocate "a total maximum daily load (TMDL) for those pollutants which the (EPA) Administrator identifies under Section 304(a)(2) as suitable for such calculation." This section of the CWA was developed to support a water quality-based system of effluent limits for chemical pollutants, and the interpretation of what an allowable load of invasive species has not been defined. Historically, for instance for sewage treatment plants, the regulations of the CWA have supported a permitting sequence of (1) technology-based effluent limits, and (2) water quality-based effluent limits. Water quality-based limits, of which TMDL is an example, are considered necessary if technology-based limits do not lead to attainment of adequate water quality to protect beneficial uses.

100TH MERIDIAN INITIATIVE

The U.S. Fish and Wildlife Service is developing the 100th Meridian Initiative: A Control Plan to Prevent the Westward Spread of Zebra Mussels and other

Aquatic Species. The goal of this initiative is to prevent the spread of zebra mussels and other ANS west of the 100th meridian. It is comprised of 6 components: 1) information and education 2) voluntary boat inspections and boater surveys 3) commercial boat hauling 4) monitoring 5) rapid response 6) evaluation. This initiative will be coordinated with the jurisdictions that straddle the 100th meridian and those further west, tribes and private entities such as water and power companies.

The CALFED NIS Program will work with the 100th Meridian Initiative in an effort to address the CALFED Strategic Plan Objective #10) Prevent the invasion of zebra mussel into California.

Federal agencies with regulatory authority over introduction and transport of aquatic species which may be invasive or noxious include, US Department of Agriculture Animal Plant Health Inspection Service (USDA-APHIS), USDA Agricultural Marketing Service (USDA-AMS), US Fish and Wildlife Service (USFWS), US Department of Commerce (USDC) and US Coast Guard (USCG).

REGIONAL ROLE

On July 8 and 9, 1997 the Western Regional Panel on Aquatic Nuisance Species held their first organizational meeting. The general goals of the WRP are to prevent nuisance species introductions, coordinate activities of the western states among federal, local, and tribal agencies and organizations and minimize impacts of already established nuisance species. Though much emphasis to date has been on the zebra mussel, there is a general recognition of the need to limit introductions of all non-native species.

The WRP will eventually include representatives from the 17 western states, several federal agencies, native Americans and Canada. The panel which meets annually, is chaired by an executive committee consisting of a state, federal, and at-large representatives. The basic structure of the Panel reflects the varying interests and concerns of the western states and is comprised of two elements, the Coastal committee and the Inland committee. It appears that the potential for this group to help California minimize impacts of introduced aquatic species is could be substantial. The purposes of the WRP are to:

- identify western region priorities for responding to aquatic nuisance species;
- make recommendations to the Task Force regarding an education, monitoring (including inspection), prevention, and control program to prevent the spread of the zebra mussel west of the 100th Meridian;
- coordinate, where possible, other aquatic nuisance species program activities in the West not conducted pursuant to the Act;
- develop an emergency response strategy for Federal, State, and local entities for stemming new invasions of aquatic nuisance species in the region;
- provide advise to public and private individuals and entities concerning methods of preventing and controlling aquatic nuisance species infestations;
- submit an annual report to the Task Force describing activities within the western region related to aquatic nuisance species prevention, research and control.

STATE ROLE

State and regional management plans for ANS are addressed in Section 1204 of NANPCA. The intent of this Strategic Plan is to focus on the identification of feasible, cost-effective management practices and measures to be taken by various entities to prevent and control NIS infestations of the San Francisco Bay-Delta and its watersheds in an environmentally sound manner. Section 1204 also states that in the development and implementation of the management plans, the state or region needs to involve appropriate local, state, and regional entities as well as public and private organizations that have expertise in ANS prevention and control. These management plans should also identify federal activities dealing with prevention and control measures, including direction of how these activities should be coordinated with state and local efforts. This CALFED NIS Strategic Plan and the Implementation Plan which will follow will be submitted to the ANS Task Force as a Regional Management Plan for the San Francisco Bay-Delta estuary and its watersheds. It is anticipated that a State Management Plan will also be developed and submitted that will include and

expand upon the information in this document. There is a Colorado River Basin Regional Plan currently under development as well.

The State of California currently has several statutory and regulatory authorities that address or potentially can address the issue of prevention and control of NIS that impact aquatic and riparian ecosystems. All of these authorities have been developed over time in response to individual target species and their associated concerns. Therefore, no comprehensive, coordinated and vigorously enforced policy framework to deal with problem species and their impacts exists. Clearly, gaps must be identified within the state's policies and statutes and recommendations made. Such improvements may entail developing methods for improving enforcement, coordination, and information dissemination regarding new or existing authorities.

The following existing authorities and policies have been identified relative to California's management of NIS that impact aquatic and riparian ecosystems. Some of these deal more broadly with all species that may invade terrestrial or transitional ecosystem, as well as aquatic ecosystems.

PORTER-COLOGNE WATER QUALITY CONTROL ACT (CALIFORNIA WATER CODE)

The Porter-Cologne Act (also known as the California Water Code or CWC) establishes the system of water quality regulation for the State, including the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The Porter-Cologne Act establishes the authority of these agencies to develop statewide water quality control plans and regional basin plans. These plans designate the beneficial uses for specific water bodies, the water quality objectives to protect those uses, and the implementation plans for the attainment of uses and associated water quality objectives. NPDES permits, described above under Clean Water Act, are an important element of the implementation plans of all California basin plans.

Section 13260 of the CWC authorizes RWQCBs to issue waste discharge requirements (WDR) to dischargers of waste into waters of the state, which include ground waters. For discharges to surface waters, WDR are federal NPDES permits, discussed above, which implement both the Clean Water Act and the Porter-Cologne Water Quality Control Act.

Section 13050(l) of the Porter-Cologne Act defines "pollution" as "an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either beneficial uses or facilities which serve the beneficial uses." Section 13050(d) defines "waste" as sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation of whatever nature, including waste placed within containers of whatever nature prior to, and for the purposes of, disposal."

Ballast water is considered to be a "waste" by the RWQCBs, based on the above definitions and definitions in the Clean Water Act. Based on these federal and state definitions and scientific evidence, the San Francisco Bay RWQCB has made a finding under its Clean Water Act authority that ballast water has created "pollution" in the estuary and that it threatens beneficial uses. Therefore, vessels discharging ballast water could be required to obtain WDR/NPDES permits which may contain conditions that could result in requirements for open ocean exchange or treatment of ballast water.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Requires that agencies adopt feasible mitigation measures in order to substantially lessen or avoid the otherwise significant environmental impacts of a proposed project. This act could be used to ensure appropriate mitigation of projects which result in increased discharges of ballast water.

CODE REGULATIONS

IMPORTATION, TRANSPORTATION AND POSSESSION OF WILD ANIMALS (PROHIBITED SPECIES) (Sections 671-671.7, Title 14, California Code of Regulations, Sections 2116-2118, Fish and Game Code)

Sections 2116-2118 define wild animals, provide a list of prohibited wild animals, provide specific restrictions regarding Atlantic salmon in the Smith

River, extend authority to the Fish and Game Commission to prohibit animals not listed in Sections 2116-2118 and to adopt certain other restrictions which appear in Sections 671-671.7, Title 14, CCR.

Section 671 Title 14, CCR, lists animals designated by the Fish and Game Commission as members of one of two classes of animals which are prohibited: AW or welfare animals (listed to prevent their depletion and/or to assure their welfare), and AD, or detrimental animals (listed because they pose a threat to native wildlife, the agricultural interests of the State, or to public health or safety). Live animals listed in Section 671 may not be imported, transported or possessed, except under special permits issued pursuant to Sections 671.1 through 671.7.

IMPORTATION OF LIVE AQUATIC PLANTS AND ANIMALS (Section 236, Title 14, California Code of Regulations)

Section 236 requires an importation permit for the importation of live aquatic plants and animals, except:
(1) Mollusks and crustaceans intended directly for the live seafood market, and which will not be introduced to waters of the State nor held in waters discharged to waters of the State,

(2) Live ornamental tropical plants or animals not utilized for human consumption or bait, which are maintained in closed systems for personal, pet industry or hobby purposes, and which will not be placed into waters of the State, and

(3) Brine shrimp.

The Department regulates importation of live aquatic plants and animals through review and approval or disapproval of permit applications. Permit applications must be submitted at least ten day before the proposed date of importation. When importation's are approved by the Department they are permitted by either a Standard Importation Permit or a Long-Term Importation Permit. The type of permit issued is determined by the species and by its proposed use.

Standard Importation Permits are issued for importations which are normally inspected by Department of Fish and Game pathologists. Examples are salmon, trout, largemouth bass and other species destined for stocking into aquaculture facilities. An approved Standard Importation Permit permits only one shipment, and the date of shipment and inspection scheduling information is on the permit.

Long-Term Importation Permits are issued for importations which are not normally inspected by Department pathologists and which generally represent little environmental risk. Examples include largemouth bass or Sacramento blackfish destined for direct sale in the live food markets. Long-Term Permits are issued for a period of up to one year, and the number of shipments permitted is normally unlimited.

STOCKING (Sections 6400 and 6431, Fish and Game Code)

Section 6400 prohibits the stocking of plants or animals into State waters without permission of the Department. Amendments to this section in 1998 provided new, severe penalties for violation of this section. Penalties are more severe when the violation involves a nuisance species. Section 6431 defines Anuisance species.

ASSEMBLY BILL 1625 (Sections 12023, 12024, and 12026, Fish and Game Code)

Assembly Bill 1625: This Act, approved by the Governor on September 12, 1998, adds Sections 12023, 12023, and 12026 to the Fish and Game Code.

Section 12023: Any person that violates Section 6400 through the use of aquatic nuisance species, as defined in Section 6431, is guilty of a misdemeanor punishable by all of the following:

1) Imprisonment in county jail for not less than six months or more than one year, a fine of not more than fifty thousand dollars for each violation or both imprisonment and fine.

2) Revocation of all of the defendant's licenses and permits issues pursuant to this code.

A defendant is also liable to the owner of any private or publicly owned property for any monetary damages directly, indirectly and proximately caused by the violation. This also covers escape of aquatic

nuisance species, but exempts release through discharge or exchange of ballast water. Also exempt are persons unaware that he or she is in possession of a plant.

Section 12024: A person that violates Section 6400 is liable for all public and private response, treatment, and remediation efforts resulting from the violation, including administrative, legal and public relations costs.

Section 12026: Any person that provides information or evidence leading to the arrest and conviction of a person or persons found guilty of violating Section 6400 is eligible to obtain a reward of up to fifty thousand dollars.

BALLAST WATER (Sections 6432, 6433, Fish and Game Code)

Section 6432: Requires the adoption of International Maritime Organization guidelines for ballast water exchange for all vessels prior to entering California waters.
Section 6433: Requires the department to adopt a ballast water control report form, consistent with the U. S. Coast Guard (USCG) to monitor compliance and shall assist with distributing these forms to vessels.

This has been deferred at the suggestion of USCG pending release of their regulations, expected in April 1999. The State of California (OSPR) and USCG have signed a cooperative agreement affecting various maritime programs; ballast water programs would be subject to such an agreement.

Sale And Transportation Of Aquatic Plants And Animals (Section 238, Title 14, California Code of Regulations)

Section 238 regulates the sale and transportation of live aquaculture products by requiring sales invoices and waybills and requiring that all aquaculture products be killed before leaving retail sale premises.

Stocking Of Aquaculture Products (Section 238.5, Title 14, California Code of Regulations)

Section 238.5 is designed to prevent the unwanted introduction of exotic species, by regulating the private stocking of live fish. It requires a stocking permit for the private stocking of all waters except (1) lakes operated under a Cooperative Stocking Agreement with the Department, and (2) private ponds in the central valley and southern California when the species are limited to certain species designated in this section (common game fish species already established in these parts of the State).
TRIPLOID GRASS CARP STOCKING (Section 238.6, Title 14, California Code of Regulations, Sections 6450-6458, Fish and game Code)

These regulations and statutes regulate the private stocking of triploid grass carp for the control of nuisance aquatic vegetation. Restrictions include stocking permit application review requirements to assure stocking only in safe areas, testing and verification of triploidy (sterility), tagging requirements, monitoring of stocked areas to prevent unauthorized movement of fish, and other restrictions.

BAIT FISH (Sections 4.00 through 4.30, 200, 200.10, 200.12, 200.13, 200.29 and 200.31, California Code of Regulations).
Sections 4.00 through 4.31 provide general statewide restrictions on the species allowed for use as live bait, specific restrictions by regulation district, and in some cases, specific restrictions by water body. Sections 200 through 200.12 provide license requirements for live freshwater bait dealers and restrictions on the transportation and sale of live bait. Sections 200.13 and 200.31 restrict the species sold by live bait. Section 200.29 provides restrictions by species and location on the sources of live bait.

CONTROL MEASURES FOR NON-NATIVE FLORA AS PART OF MANAGEMENT PLANS FOR DFG MANAGED ECOLOGICAL RESERVES AND WILDLIFE AREAS (FISH AND GAME COMMISSION POLICY; Ccr, Title 14 ' 550 AND 630)

Each ecological reserve and wildlife area is managed by the Department of Fish and Game by separate specific plan. The management plans are written in conformance with the California Environmental Quality Act, usually as mitigated Negative Declarations. The Department of Fish and Game's goals to manage and control impacts of prohibited/detrimental species on natural ecosystems in California through (a) leading efforts to eradicate detrimental animal and plant species from wildlife communities and (b) seeking legislation to reduce the

number of exceptions in the law that allow prohibited species to be imported and to increase fines and penalties for the introduction of illegal species into the wild.

TAKING OF HARMFUL FISH (Section 5501, Fish and Game Code)

The department may, or prescribe the terms of a permit to, take any fish that is unduly preying upon any bird, mammal or fish or is harmful to other species and should be reduced in numbers.

HYDRILLA (Food And Agricultural Code Sections 6048-6049)

These code sections deal specifically with the aquatic plant Hydrilla (*Hydrilla verticullata*). The codes specifically prohibit the production, propagation, harvest, possession, selling or distribution of Hydrilla. Fines and penalties are described for unlawful activities. The director of CDFA is also required to conduct an ongoing survey and detection program for Hydrilla. When discovered, the director is directed to immediately investigate the feasibility of eradication and do so if determined feasible.

In cooperation with the University of California, the U.S. Department of Agriculture or other agencies, the director of CDFA may develop and implement biological control methods to eradicate or control Hydrilla in any area of the State and may conduct studies for these purposes.

In addition to exercising its statutory and regulatory authorities, the State also fosters research and education/outreach programs through various State and federal agencies and local organizations and institutions. Examples include the US Department of Agriculture-Agricultural Research Service, University of California and California State University system, the San Francisco Bay-Delta Interagency Ecological Program, the San Francisco Bay Institute and the Water Education Foundation. Implementation of this management plan is intended to assist the State in enhancing and better coordinating these programs and activities.

IMPLEMENTATION PLAN

A CALFED NIS Implementation Plan will be developed in accordance with this strategic management plan. Strategies will be identified to address prevention, management, control and eradication. The Implementation Plan will develop and define objectives for every applicable major issue identified above, as well as the tasks and activities necessary to address the major issues and achieve the three goals, including development of priorities and criteria. It will address these issues in a manner that identifies the who, what, when, where, and how for proposed tasks or actions.

Each year a new implementation plan will be developed to direct and focus future activities. These plans will adopt the adaptive management strategy identified by CALFED, reflecting an evaluation of progress made, new information learned, and necessary actions remaining as projects are completed.